

**Listing of Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

What is claimed is:

- 1 Claim 1. (Currently amended) A partially thio-modified aptamer that binds to a  
2 TGF-beta protein, wherein the partially thio-modified aptamer comprises one or more  
3 thio-modifications on the aptamer backbone.
- 1 Claim 2. (Original) The aptamer of claim 1, wherein the TGF-beta protein  
2 comprises a human TGF-beta.
- 1 Claim 3. (Original) The aptamer of claim 1, wherein the TGF-beta protein  
2 comprises a TGF-beta dimer.
- 1 Claim 4. (Original) The aptamer of claim 3, wherein the TGF-beta dimer is a  
2 homodimer.
- 1 Claim 5. (Original) The aptamer of claim 4, wherein the TGF-beta homodimer is a  
2 TGF-beta 1, 2 or 3 homodimer.
- 1 Claim 6. (Original) The aptamer of claim 3, wherein the TGF-beta dimer is a  
2 TGFbeta 1, 2 or 3 heterodimer.
- 1 Claim 7. (Previously presented) The aptamer of claim 1, wherein the aptamer  
2 comprises the sequence and modifications of SEQ ID NO: 62.
- 1 Claim 8. (Original) The aptamer of claim 1, wherein the aptamer is achiral.
- 1 Claim 9. (Original) The aptamer of claim 1, wherein the aptamer further comprises  
2 a detectable label.
- 1 Claim 10. (Original) The aptamer of claim 1, further comprising one or more  
2 pharmaceutically acceptable salts.

- 1 Claim 11. (Original) The aptamer of claim 1, further comprising a diluent.
- 1 Claim 12. (Withdrawn) A partially thio-modified aptamer that binds to a TGF-beta  
2 receptor.
- 1 Claim 13. (Withdrawn) The aptamer of claim 12, wherein the TGF-beta receptor is a  
2 signaling receptor.
- 1 Claim 14. (Withdrawn) The aptamer of claim 12, wherein the TGF-beta receptor is a  
2 co-receptor.
- 1 Claim 15. (Withdrawn) The aptamer of claim 13, wherein the TGF-beta signaling  
2 receptor comprises a human TGF-beta signaling receptor.
- 1 Claim 16. (Withdrawn) The aptamer of claim 13 wherein the TGF-beta signaling  
2 receptor comprises a TbetaRI or a TbetaRII receptor.
- 1 Claim 17. (Withdrawn) The aptamer of claim 13, wherein the target of the aptamer is  
2 the GS domain of a TbetaRI receptor.
- 1 Claim 18. (Withdrawn) The aptamer of claim 14, where the co-receptor is TGF-beta  
2 3.
- 1 Claim 19. (Withdrawn) The aptamer of claim 12, wherein the aptamer is achiral.
- 1 Claim 20. (Withdrawn) A partially thio-modified aptamer that binds to a ligand-  
2 receptor complex comprising a TGF-beta ligand and a receptor complex comprising a  
3 TbetaRI and a TbetaRII receptors.
- 1 Claim 21. (Withdrawn) The aptamer of claim 20, wherein the target of the aptamer is  
2 the GS domain of a TbetaRI receptor.
- 1 Claim 22. (Withdrawn) The aptamer of claim 20, wherein the aptamer is achiral.

- 1 Claim 23. (Withdrawn) A partially thio-modified aptamer that binds to a ligand  
2 binding trap capable of trapping TGF-beta ligands.
- 1 Claim 24. (Withdrawn) The aptamer of claim 23, wherein the ligand binding trap  
2 comprises decorin, latency-associated protein (LAP) or alpha-macroglobulin.
- 1 Claim 25. (Withdrawn) The aptamer of claim 23, wherein the aptamer is achiral.
- 1 Claim 26. (Withdrawn) A partially thio-modified aptamer that binds to an auxiliary  
2 protein that promotes binding of TGF-beta ligand to Tbeta signaling receptors.
- 1 Claim 27. (Withdrawn) The aptamer of claim 26, wherein the auxiliary protein is a  
2 SARA protein.
- 1 Claim 28. (Withdrawn) The aptamer of claim 26, wherein the aptamer is achiral.
- 1 Claim 29. (Withdrawn) A partially thio-modified aptamer that binds to a Smad  
2 protein.
- 1 Claim 30. (Withdrawn) The aptamer of claim 29, wherein the Smad protein is an R-  
2 Smad, a Co-Smad, an I-Smad or a combination thereof.
- 1 Claim 31. (Withdrawn) The aptamer of claim 29, wherein the aptamer is achiral.
- 1 Claim 32. (Withdrawn) A partially thio-modified aptamer that binds to a TGF-beta  
2 protein complex and enhances TGF-beta activity.
- 1 Claim 33. (Withdrawn) The aptamer of claim 32, wherein the binding site of the  
2 aptamer on the TGF-beta protein complex comprises a region of a ligand binding trap  
3 protein.
- 1 Claim 34. (Withdrawn) The aptamer of claim 32, wherein the binding site of the  
2 aptamer on the TGF-beta protein complex comprises a region of an inhibitory I-Smad.
- 1 Claim 35. (Withdrawn) The aptamer of claim 32, wherein the aptamer is achiral.

1 Claim 36. (Withdrawn) A partially thio-modified aptamer that binds to a TGF-beta  
2 protein complex and inhibits TGF-beta activity.

1 Claim 37. (Withdrawn) The aptamer of claim 36, wherein the binding site of the  
2 aptamer on the TGF-beta protein complex comprises a region of an R-Smad or a Co-  
3 Smad.

1 Claim 38. (Withdrawn) The aptamer of claim 36, wherein the aptamer is achiral.

1 Claim 39. (Withdrawn) A partially modified thioaptamer that inhibits TGF-beta  
2 activity by binding to a TGF-beta ligand, a TGF-beta ligand-Tbeta receptor complex, a  
3 TGF-beta signaling receptor and co-receptor, to an R-Smad or a Co-Smad.

1 Claim 40. (Withdrawn) The aptamer of claim 39, wherein the aptamer is achiral.

1 Claim 41. (Withdrawn) A partially modified thioaptamer that modifies TGF-beta  
2 activity by binding to a TGF-beta ligand, a TGF-beta ligand-Tbeta receptor complex, a  
3 TGF-beta signaling receptor and co-receptor, to an R-Smad or a Co-Smad.

1 Claim 42. (Withdrawn) A method of inhibiting TGF- $\beta$  activity comprising the steps  
2 of:

3 providing to a host in need of therapy a pharmaceutically effective amount of a  
4 thioaptamer that specifically binds to and inhibits TGF- $\beta$  activity.

1 Claim 43. (Withdrawn) The method of claim 42, wherein the thioaptamer is provided  
2 to the host to ameliorate the effects of: fibrosis, scarring and adhesion during wound  
3 healing; fibrotic diseases of the lung, liver and kidney; atherosclerosis, arteriosclerosis;  
4 cancers including gliomas, colon cancer, prostate cancer, breast cancer, neurofibromas,  
5 lung cancer; angiopathy, vasculopathy, nephropathy; systemic sclerosis; viral infections  
6 accompanied by immune suppression (HIV, HCV); and immunological disorders and  
7 deficiencies (auto-immune diseases).

- 1 Claim 44. (Withdrawn) A method of quantitating TGF- $\beta$  levels in a sample  
2 comprising the step of contacting a sample with a TGF- $\beta$ -specific thioaptamer.
- 1 Claim 45. (Withdrawn) The method of claim 44, wherein the samples comprises a  
2 physiological sample.
- 1 Claim 46. (Withdrawn) The method of claim 44, wherein the sample comprise a  
2 blood, tissue, cells, supernatant, media.
- 1 Claim 47. (Withdrawn) The method of claim 44, wherein the TGF- $\beta$  protein  
2 comprises a human TGF- $\beta$ .
- 1 Claim 48. (Withdrawn) The method of claim 44, wherein the TGF- $\beta$  protein  
2 comprises a TGF- $\beta$  homodimer.
- 1 Claim 49. (Withdrawn) The method of claim 44, wherein the TGF- $\beta$  protein  
2 comprises a TGF- $\beta$ 1, 2 or 3 heterodimer.
- 1 Claim 50. (Withdrawn) The method of claim 44, wherein the thioaptamer comprises  
2 one or more thio-modifications as set forth in SEQ ID NOS.: 4-22.
- 1 Claim 51. (Withdrawn) The method of claim 44, wherein the thioaptamer further  
2 comprises a detectable label.
- 1 Claim 52. (Withdrawn) The method of claim 44, wherein the thioaptamer further  
2 comprises a detectable detectable selected from the group consisting of a colorimetric, a  
3 fluorescent, a radioactive and an enzymatic agent.
- 1 Claim 53. (Withdrawn) A method of modulating TGF- $\beta$  signaling comprising the  
2 steps of:  
3 administering to a host a TGF- $\beta$  specific thioaptamer that modulates the activity through  
4 the TGF- $\beta$  receptor in a dosage effective to reduce activity of the TGF- $\beta$ .

1 Claim 54. (Withdrawn) The method of claim 53, wherein the thioaptamer modulates  
2 the activity through the TGF- $\beta$  receptor by increasing activity.

1 Claim 55. (Withdrawn) The method of claim 53, wherein the thioaptamer modulates  
2 the activity through the TGF- $\beta$  receptor by decreasing activity.

1 Claim 56. (Withdrawn) The method of claim 53, wherein the thioaptamer is selected  
2 from the group consisting of SEQ ID NOS.:4-22.

1 Claim 57. (Withdrawn) A method of treating a pathological condition due to  
2 increased TGF- $\beta$  activity comprising the steps of:  
3 administering to a host an effective dosage of a thioaptamer that modulates TGF- $\beta$ .

1 Claim 58. (Withdrawn) The method of claim 57, wherein the thioaptamer binds to  
2 TGF- $\beta$ , the TGF- $\beta$  receptor, a TGF- $\beta$  auxiliary protein, a TGF- $\beta$  ligand binding trap  
3 protein or a TGF- $\beta$  Smad protein.

1 Claim 59. (Withdrawn) The method of claim 57, wherein the thioaptamer modulates  
2 the activity through the TGF- $\beta$  receptor by increasing activity.

1 Claim 60. (Withdrawn) The method of claim 57, wherein the thioaptamer modulates  
2 the activity through the TGF- $\beta$  receptor by decreasing activity.

1 Claim 61. (Withdrawn) The method of claim 57, wherein the thioaptamer is selected  
2 from the group consisting of SEQ ID NOS.: 4-22.

1 Claim 62. (Withdrawn) The method of claim 57, wherein the pathological condition  
2 comprises:

3 fibrosis, scarring and adhesion during wound healing; fibrotic diseases of the lung, liver  
4 and kidney; atherosclerosis and arteriosclerosis; cancers such as gliomas, colon cancer,  
5 prostate cancer, breast cancer, neurofibromas, lung cancer; angiopathy, vasculopathy,

6 nephropathy; systemic sclerosis; viral infections accompanied by immune suppression  
7 (HIV, HCV); and immunological disorders and deficiencies (auto-immune diseases).

1 Claim 63. (Withdrawn) The method of claim 57, wherein the TGF- $\beta$  specific  
2 thioaptamer is encapsulated.

1 Claim 64. (Withdrawn) The method of claim 57, wherein the capsule is degradable  
2 by an external stimulus to release the TGF- $\beta$  specific thioaptamer.

1 Claim 65. (Withdrawn) The method of claim 57, wherein the external stimulus is  
2 selected from the group consisting of UV light, acid, water, in vivo enzymes, ultrasound  
3 and heat.

1 Claim 66. (Withdrawn) The method of claim 57, wherein the TGF- $\beta$  specific  
2 thioaptamer is bound to a binding molecule.

1 Claim 67. (Withdrawn) The method of claim 57, wherein the TGF- $\beta$  specific  
2 thioaptamer is bound to a binding molecule and further comprising the step of detaching  
3 the binding molecule from the TGF- $\beta$  specific thioaptamer.

1 Claim 68. (Withdrawn) A method of treating a pathological condition in which  
2 increased TGF- $\beta$  activity has been implicated comprising the steps of:  
3 administering to a host a TGF- $\beta$  specific thioaptamer in a pharmaceutically acceptable  
4 carrier at a dosage effective to reduce TGF- $\beta$  activity.

1 Claim 69. (Withdrawn) The method of claim 68, wherein the pharmaceutically  
2 acceptable carrier is selected from the group consisting of a cream, gel, aerosol and  
3 powder for topical application.

1 Claim 70. (Withdrawn) The method of claim 68, wherein the pharmaceutically  
2 acceptable carrier is selected from the group consisting of a sterile solution for injection,  
3 irrigation and inhalation.

1 Claim 71. (Withdrawn) The method of claim 68, wherein the pharmaceutically  
2 acceptable carrier comprises a sterile dressing for topically covering a wound.

1 Claim 72. (Withdrawn) The method of claim 68, wherein the pharmaceutically  
2 acceptable carrier is selected from the group consisting of a biopolymer and a polymer  
3 for implanting within a wound.

1 Claim 73. (Withdrawn) The method of claim 68, further comprising the step of  
2 administering a growth factor other than TGF- $\beta$ .

1 Claim 74. (Withdrawn) The method of claim 68, wherein the TGF- $\beta$  specific  
2 thioaptamer is encapsulated.

1 Claim 75. (Withdrawn) A method of modulating TGF- $\beta$  signaling comprising the  
2 steps of:  
3 administering to a host a TGF- $\beta$  ligand binding trap specific thioaptamer that modulates  
4 the activity through the TGF- $\beta$  receptor in a dosage effective to reduce activity of the  
5 TGF- $\beta$ .

1 Claim 76. (Withdrawn) A method of modulating TGF- $\beta$  signaling comprising the  
2 steps of:  
3 administering to a host a TGF- $\beta$  auxiliary protein specific thioaptamer that modulates the  
4 activity through the TGF- $\beta$  receptor in a dosage effective to reduce activity of the TGF- $\beta$ .

1 Claim 77. (Withdrawn) A method of modulating TGF- $\beta$  signaling comprising the  
2 steps of:  
3 administering to a host a TGF- $\beta$  Smad protein specific thioaptamer that modulates the  
4 activity through the TGF- $\beta$  receptor in a dosage effective to reduce activity of the TGF- $\beta$ .



- 1 Claim 78. (Previously presented) A partially thio-modified aptamer that binds
- 2 specifically to TGF- $\beta$  comprising a sequence and modifications that is at least 80%
- 3 complementary to SEQ ID NO: 62.